

WHAT IS CLAIMED IS:

1. A method for synchronizing clocks of a first and a second nodes in a wireless local area network, comprising steps of:
 - asserting a request signal from said first node to said second node;
 - asserting a responsive signal packet containing a time stamp in response to said request signal from said second node to said first node;
 - tagging a local time value to said responsive signal packet at said first node;
 - operating said time stamp and said local time value at said first node according to a control program to obtain a difference T ; and
 - adjusting at least one of said clocks of said first and said second nodes to synchronize said clocks of said first and said second nodes according to said difference T .
2. The method according to claim 1 wherein said first and said second nodes are a station and an access point, respectively.
3. The method according to claim 2 wherein said clock of said station is adjusted to synchronize with said clock of said access point according to said difference T .
4. The method according to claim 3 wherein said request signal is a probe-request signal asserted by said station.
5. The method according to claim 3 wherein said responsive signal packet is a probe-response signal packet asserted by said access point.
6. The method according to claim 3 wherein said time stamp is a counting value $C1$ of a remote counter in said access point, which is generated when said responsive signal packet is asserted by said access point.

7. The method according to claim 6 wherein said local time value is a counting value C2 of a local counter in said station, which is generated when said responsive signal packet is received by said station.
8. The method according to claim 7 wherein said difference T is equal to $C1 - C2$, and stored in a difference register in said station.
9. The method according to claim 8 wherein said clock of said station is adjusted by adding said difference T to a new counting value of said local counter.
10. The method according to claim 9 further comprising a step of determining switching timing between a working and a sleeping modes of said station after said clocks of said station and said access point are synchronized, said step comprising sub-steps of
 - obtaining next target beacon transmission time by operating a beacon interval and said new counting value adjusted with said difference T; and
 - determining said switching timing between said working and said sleeping modes of said station according to said new counting value, said difference T and said next target beacon transmission time.
11. The method according to claim 1 for use between a first and a second stations, which serve as said first and said second nodes, respectively.
12. A wireless local area network media access controller, disposed in a first node of a wireless local area network, comprising:
 - a local time tagger tagging a local time value to a responsive signal packet received from a second node of said wireless local area network in response to a request signal asserted by said first node to said second

node; and

a difference register storing therein a difference T between said local time value and a time stamp, said difference T being referred to adjust at least one of clocks of said first and said second nodes to synchronize said clocks of said first and said second nodes.

13. The wireless local area network media access controller according to claim 12 wherein said first and said second nodes are a station and an access point, respectively.

14. The wireless local area network media access controller according to claim 13 wherein said clock of said station is adjusted to synchronize with said clock of said access point according to said difference T.

15. The wireless local area network media access controller according to claim 13 wherein said request signal is a probe-request signal asserted by said station, and wherein said responsive signal packet is a probe-response signal packet asserted by said access point.

16. The wireless local area network media access controller according to claim 13 wherein said time stamp is a counting value C1 of a remote counter in said access point, which is generated when said responsive signal packet is asserted by said access point.

17. The wireless local area network media access controller according to claim 16 wherein said local time value is a counting value C2 of a local counter in said station, which is generated when said responsive signal packet is received by said station.

18. The wireless local area network media access controller according to claim 17 wherein said clock of said station is adjusted by adding

said difference T to a new counting value of said local counter.

19. The wireless local area network media access controller according to claim 17 further comprising a register for storing a next target beacon transmission time, said next target beacon transmission time being obtained by operating a beacon interval and said new counting value adjusted with said difference T, and referred to determine switching timing between a working and a sleeping modes of said station along with said new counting value and said difference T.
20. The wireless local area network media access controller according to claim 12 wherein said first and said second nodes are a first and a second station, respectively.